



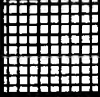



























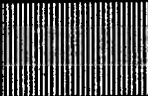
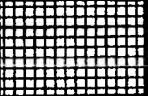

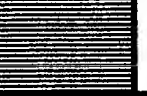


OPCODE	0	0	0	0	1	1	1	1
	0	0	1	1	0	0	1	1
	0	1	0	1	0	1	0	1
0 0 0								
0 0 1								
0 1 0								
0 1 1								
1 0 0								
1 0 1								
1 1 0								
1 1 1								

COLOR CODE	1 0 0	1 0 1	1 1 0	1 1 1	0 - -
COLOR					

**COLOR ASSIGNMENT FOR N = 4**

**FIG. 23 - AMENDED**

OPCODE	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
0000																
0001																
0010																
0011																
0100																
0101																
0110																
0111																
1000																
1001																
1010																
1011																
1100																
1101																
1110																
1111																

COLOR CODE	1000	1001	1010	1011	1100	1101	1110	1111	0---
COLOR									

COLOR ASSIGNMENT FOR N = 8

FIG. 24 - AMENDED

## **LEGEND**

<b>N</b>	: DIMENSION OF LOGIC GAME = NUMBER OF PREDETERMINED COLORS WHICH MAY BE DISPLAYED, <u>(EXCLUDED REFLECTED COLOR WHEN DISPLAY IS DARK)</u> = 4 (FOR THE PREFERRED EMBODIMENT)
<b>n</b>	: NUMBER OF BINARY BITS IN OPCODE AND COLOR CODE = $\ln N + 1 = 3$ (FOR THE PREFERRED EMBODIMENT)
<b>I</b>	: ROW NUMBER I, $I = 1, \dots, N$
<b>J</b>	: COLUMN NUMBER J, $J = 1, \dots, N$
<b>DIR</b>	: ROUTE DIRECTION BETWEEN TWO ADJACENT ROUTING SQUARES; "R" DENOTES RIGHT "U" DENOTES UP "L" DENOTES LEFT "D" DENOTES DOWN
<b>T</b>	: OPCODE TRANSMITTER; $T = 1, \dots, 2N$
<b>R</b>	: OPCODE RECEIVER; $R = 1, \dots, 2N$
<b>RC(T)</b>	: RECEIVER CONNECTED TO TRANSMITTER "T"
<b>TC(R)</b>	: TRANSMITTER CONNECTED TO RECEIVER "R"
<b>W(I,J)</b>	: STATUS OF SWITCH LOCATED AT ROW "I" AND COLUMN "J," <u>OR STATUS OF ROUTING SQUARE AT ROW "I" AND COLUMN "J"</u>
<b>TCODE(T)</b>	: OPCODE AT TRANSMITTER "T"
<b>RCODE(R)</b>	: OPCODE AT RECEIVER "R"
<b>C(R)</b>	: COLOR CODE AT RECEIVER "R"
<b>x(i)</b>	: THE $i$ th BIT OF OPCODE "X"
<b>y(i)</b>	: THE $i$ th BIT OF OPCODE "Y"
<b>cb(i)</b>	: THE $i$ th BIT OF COLOR CODE "C"
<b>C1(I,J)</b>	: COLOR CODE AT THE RIGHT EDGE OF THE ROUTING SQUARE LOCATED AT ROW "I" AND COLUMN "J"
<b>C2(I,J)</b>	: COLOR CODE AT THE TOP EDGE OF THE ROUTING SQUARE LOCATED AT ROW "I" AND COLUMN "J"
<b>C(I,J)</b>	: COLOR CODE SELECTED FOR DISPLAY AT THE ROUTING SQUARE LOCATED AT ROW "I" AND COLUMN "J"
$\oplus$	: EXCLUSIVE OR BOOLEAN FUNCTION
$\odot$	: [INCLUSIVE OR BOOLEAN FUNCTION] <u>EXCLUSIVE NOR BOOLEAN FUNCTION</u>

**EXPLANATION OF PROGRAM VARIABLES OF FIGS. 19 – 22**

**FIG. 18**  
**ANNOTATED MARKED UP DRAWING**

## **LEGEND**

- N** : DIMENSION OF LOGIC GAME = NUMBER OF PREDETERMINED  
COLORS WHICH MAY BE DISPLAYED, (EXCLUDED REFLECTED  
COLOR WHEN DISPLAY IS DARK)  
= 4 (FOR THE PREFERRED EMBODIMENT)
- n** : NUMBER OF BINARY BITS IN OPCODE AND COLOR CODE  
=  $\ln N + 1 = 3$  (FOR THE PREFERRED EMBODIMENT)
- I** : ROW NUMBER I, I = 1, ..., N
- J** : COLUMN NUMBER J, J = 1, ..., N
- DIR** : ROUTE DIRECTION BETWEEN TWO ADJACENT ROUTING SQUARES;  
"R" DENOTES RIGHT  
"U" DENOTES UP  
"L" DENOTES LEFT  
"D" DENOTES DOWN
- T** : OPCODE TRANSMITTER; T = 1, ..., 2N
- R** : OPCODE RECEIVER; R = 1, ..., 2N
- RC(T)** : RECEIVER CONNECTED TO TRANSMITTER "T"
- TC(R)** : TRANSMITTER CONNECTED TO RECEIVER "R"
- W(I,J)** : STATUS OF SWITCH LOCATED AT ROW "I" AND COLUMN "J," OR  
STATUS OF ROUTING SQUARE AT ROW "I" AND COLUMN "J"
- TCODE(T)** : OPCODE AT TRANSMITTER "T"
- RCODE(R)** : OPCODE AT RECEIVER "R"
- C(R)** : COLOR CODE AT RECEIVER "R"
- x(i)** : THE *i*th BIT OF OPCODE "X"
- y(i)** : THE *i*th BIT OF OPCODE "Y"
- cb(i)** : THE *i*th BIT OF COLOR CODE "C"
- C1(I,J)** : COLOR CODE AT THE RIGHT EDGE OF THE ROUTING SQUARE  
LOCATED AT ROW "I" AND COLUMN "J"
- C2(I,J)** : COLOR CODE AT THE TOP EDGE OF THE ROUTING SQUARE  
LOCATED AT ROW "I" AND COLUMN "J"
- C(I,J)** : COLOR CODE SELECTED FOR DISPLAY AT THE ROUTING SQUARE  
LOCATED AT ROW "I" AND COLUMN "J"
- ⊕** : EXCLUSIVE OR BOOLEAN FUNCTION
- ⊙** : EXCLUSIVE NOR BOOLEAN FUNCTION

## **EXPLANATION OF PROGRAM VARIABLES OF FIGS. 19 – 22**

**FIG. 18 - AMENDED**